



Forest Learning Center Opens on the Jackson Demonstration State Forest

By Tess Albin-Smith
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More than 80 people attended the dedication of a new Jackson Demonstration State Forest (JDSF) Learning Center on Tuesday October 14, at Camp 20 in JDSF. This event was held in conjunction with the 40th anniversary of the world-renowned Caspar Creek Watershed Study. The theme of this event was *"Building Partnerships for a Better Understanding of the Forest Environment."*

The California Department of Forestry and Fire Protection (CDF), Mendocino Unit, collaborated on the Forest Learning Center with the USDA Forest Service, Pacific Southwest

Research Station. The first completed building is a 2500 sq ft combination barracks and office. It represents the beginning of a multi-phase project idea conceived many years ago, designed to facilitate research and learning on the Jackson Demonstration State Forest. Expansion plans include classrooms, library resources, databank access, an interpretive center, a museum, and more. Any group or individual interested in forestry research may reserve the facility.



CDF Director Andrea Tuttle with acting Station Director Pete Roussopoulos for the USDA Forest Service, Pacific Southwest Research Station. In front of the new learning center.

Since this project is a collaboration, there were two keynote speakers; CDF Director Andrea Tuttle, and Pete Roussopoulos, acting station director of the USDA Forest Service Pacific Southwest Research Station. Former CDF Director Richard Wilson provided a historical perspective. The audience included representatives from the office of

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Assemblywoman Patty Berg, the Mendocino County Board of Supervisors, the California Dept. of Fish and Game, the USDA Natural Resources Conservation Service, the CDF Soquel Demonstration State Forest, several forestry consulting firms, private industry groups, and Humboldt State University.

The USDA Forest Service, Pacific Southwest Research Station has partnered with CDF for more than four decades on one of the nation's longest-standing and most productive watershed research projects, the Caspar Creek Watershed Study. The project investigates the effects of forest management activities on streamflow, sedimentation, erosion, and ecological processes in forested watersheds. Other researchers will also share the new

Forest Learning Center for studies on silviculture, timber management, forest engineering, wildlife and fisheries management, fire science, rare plants, mushrooms, climatology, watershed planning, recreation, and water quality. Current partners in the Learning Center concept include the University of California, Humboldt State University, and California Polytechnic University.

The new JDSF Forest Learning Center will provide a resource for researchers and help meet the State Forest mission, which is to demonstrate forest practices and management principles that are sustainable and provide for healthy forest ecosystems.

Process-Based Management of Large Woody Debris at the Basin Scale on Soquel Creek, California

By G. Mathias Kondolf and Neil S. Lassette
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The Soquel Creek Basin (Santa Cruz County) drains 104 km² before emptying into the Monterey Bay and the Pacific Ocean. Catastrophic floods occurred five times in the basin from 1898 to 2003 when logjams at local bridges diverted flow into populated areas. In response, managers removed instream large woody debris (LWD) to prevent future clogging and failure of bridges and culverts.

This research examined the characteristics of LWD in study reaches, developed a model to simulate wood transport and assess the effects of management on wood transport, and compared the economic costs of current wood management to a wood passing approach.

We distinguished two LWD reach types in the Soquel Creek Basin: 1) source reaches and 2) transport reaches. Source reaches are the source of LWD for the basin (Figure 1). Wood enters from the adjacent forest and is stored in the reach until storms move the material downstream to the transport reach. Transport reaches receive relatively little LWD from adjacent forests, instead relying on the fluvial transport of wood from source reaches.

We developed a stochastic model to predict wood transport from source to transport reaches. The model determined that flows of 15-year return



Mathias Kondolf standing on a log jam in the east branch of Soquel creek.

period and greater flushed wood from source reaches into transport reaches. This result fits with the past history of the basin. The last two significant logjams at the Soquel Drive Bridge

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(1955 and 1982) occurred at flows exceeding a 15-year return period, and coincide with the movement of stored wood in source reaches into transport reaches. Management of LWD in the Soquel Creek Basin should focus on these wood-moving events.

Post-disaster programs of wood removal occur in transport reaches and have little effect on preventing hazardous logjams because the wood originates in source reaches that are not cleared by managers. In fact, the practice of removing wood from transport reaches may intensify logjam formation at downstream bridges. Wood removal eliminates "key pieces" that obstruct piece movement and limit travel distance. In the absence of key pieces, wood travels until encountering other obstructions such as culverts and bridges. Removing key pieces reduces the natural wood storage capacity of transport reaches and leaves more pieces to interact with infrastructure. By removing key pieces more pressure is placed on bridges and culverts to pass wood, exacerbating the problem of large, catastrophic logjams. We also found that piece size reduction may also exacerbate the problem of logjam formation at bridges and culverts. Piece size reduction is intended to facilitate passage of wood through small openings, but by reducing piece size heterogeneity, a greater volume of wood is able to be mobilized at lower than natural flows, requiring infrastructure to pass greater volumes of wood at lower flows.

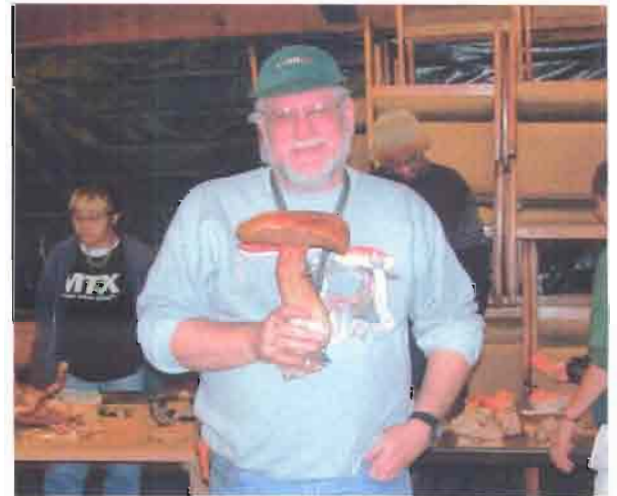
As an alternative to programs of wood removal and piece size reduction, we proposed an alternative where infrastructure was removed or modified to facilitate wood passage. This refocuses the problem away from naturally occurring LWD toward infrastructure. Using cost estimates obtained from interviews with public works personnel and written material, we estimated that the costs of a wood passing approach were half as much as the current wood removal approach. More precise estimates of costs may be available through analysis of other sources, but this analysis reveals that ecologically sustainable methods of instream wood management are available.

Neil S. Lassettre is a graduate student and G. Mathias Kondolf is a professor at U.C. Berkeley in California. For the complete report see page 4.

New State Forests Gathering Permit Approved For Use

From mushrooms to blackberries to feathers to redwood boughs, the public has gathered minor state forest products for years. Recently, the gathering permit form was revised to ensure that no resource would be over-harvested or damaged during the collecting process. The forest manager has the discretion to close an area to gathering in order to ensure that resources remain healthy, reproductive and available for Native American cultural activities.

The most frequent items collected by the



A large mushroom from Jackson Demonstration State Forest.

general public are mushrooms, downed redwood boughs and firewood. The new form broadens the scope of gathering to include organic materials utilized by Native Americans, such as grasses for basketweaving, feathers, deer hooves, herbs, bones and colored stones. The form also asks the gatherer to name the location where the items to be gathered are found.

This allows the forest manager to keep a record of where the plants are that people want to gather, in order to help in management decisions for those areas. After a permit has been granted, the gatherer must check in at the forest office before heading out into the forest. There may be timber harvest or road grading activities in progress that could put the gatherer in danger and the forest manager can direct the gatherer to other locations that have the same resources. The new form was presented for comment to the CDF Native American Advisory Committee (NAAC). The Native American council members present unanimously recommended to the full NAAC that the gathering policy be adopted.

For more
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California's
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visit the CDF
website at
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State Forests Research and Demonstration Newsletter

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☐ List of Tree Notes #1-27, from CDF Forest Pests Program (new)
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☐ CA Forestry Report #1, Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood, and Sediment (new)
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